

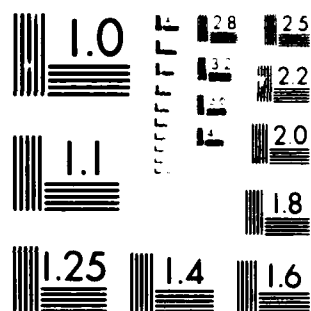
10318A MLRS MISSILE NUMBERS BN-121 BN-120 BN-113 ROUND
NUMBERS V-336/PQ-7..(U) ARMY ELECTRONICS RESEARCH AND
DEVELOPMENT COMMAND WSMR NM ATM.. D C KELLER 15 OCT 82
ERADCOM/ASL-DR-1264

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19318A MLRS, Missile Numbers BN-121, BN-120, BN-113, Round Numbers V-336/PQ-76, V-337/PQ-77, V-338/PQ-78 are presented in tabular form.		

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INTRODUCTION

19318A MLRS, Missile Numbers BN-121, BN-120 and BN-113, Round Numbers V-336/PQ-76, V-337/PQ-77 and V-338/PQ-78, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0835:02, 0835:07 and 0835:11 MDT, 15 Oct 1982. The schedule launch times were 0830, 0830:04.5 and 0830:09 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from Pilot-balloon observations at:

SITE AND ALTITUDE

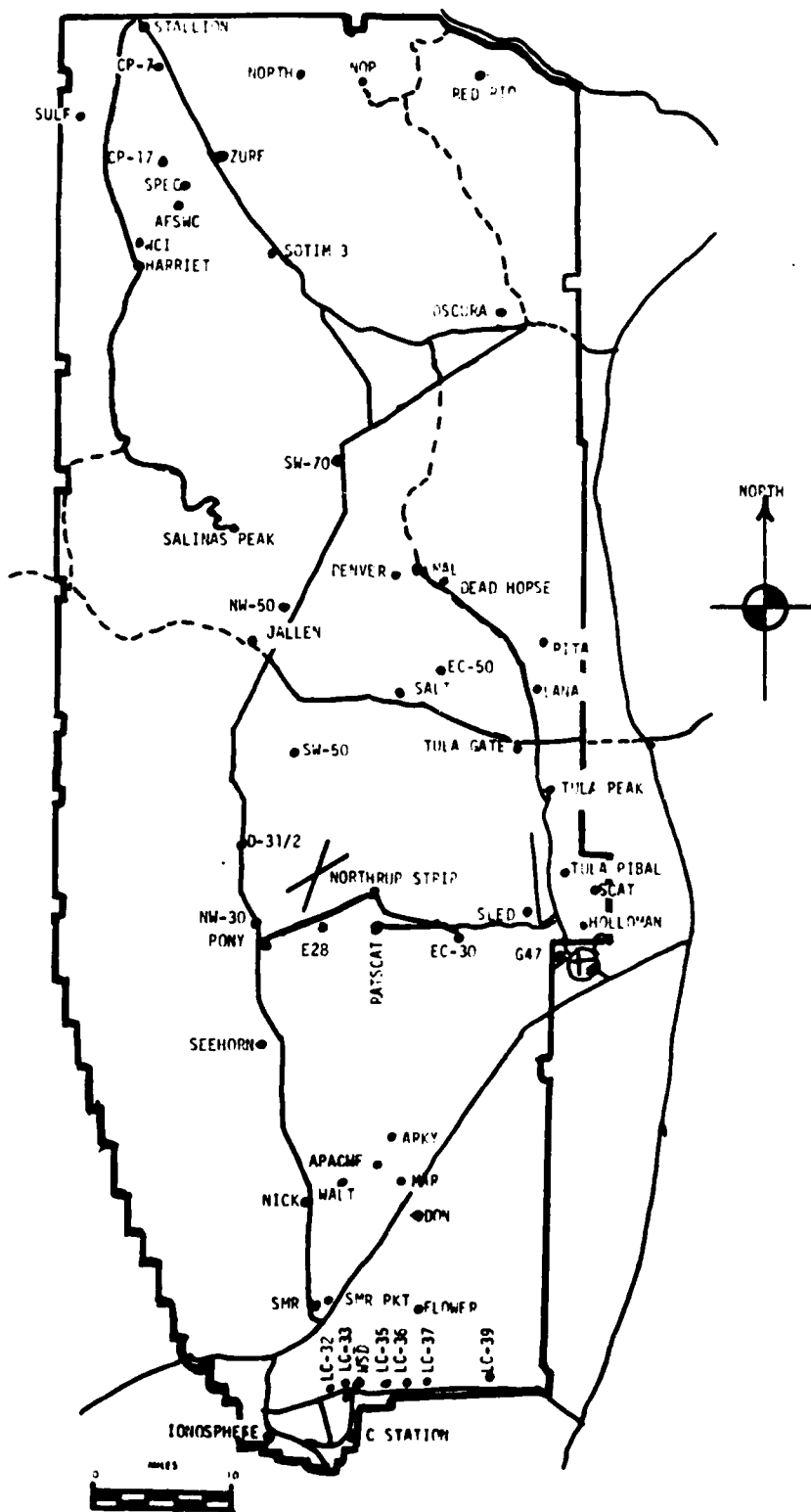
LC-33	2km
Don	2km

(2) Air structure data (rawinsonde) were collected at the following Met Sites.

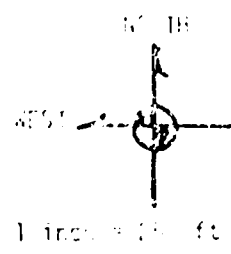
SITE AND TIME

LC-37	0700 MDT
WSD	0825 MDT
LC-37	0930 MDT

WSMR METEOROLOGICAL SITES



10-33
Landing Area



110° 55'

Line of Fire

SLT
Tower

110° 55' 00"
1-3 Radar

1-375A

○ Anemometer Pole #3

○ Anemometer Pole #2

○ 1-319A

1-351A

○ 1-350A

Anemometer Pole #1

110° 55'

110° 55'

110° 55'

110° 55'

1-300

PROJECT SURFACE OBSERVATION

TABLE 1											
STATION LC-33											
DATE 15		Oct		82		X= 484,982.64		Y= 185,957.73		H= 3995.00	
DAY		MONTH		YEAR							
TIME	W D I	PRESSURE	TEMPERATURE	DEW POINT	RELATIVE	DENSITY	DIRECTION	WIND	CHARACTER	VISIBILITY	
		mbs	of °C	of °C	%	gm/m ³	degs	speed	kts	ITY	
0835		888.4	8.2	1.5	63	1099	040	02		40	

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	AMT	TYPE	AMT	TYPE	
0 AS 13,000							

PSYCHROMETRIC COMPUTATION

TIME: MDT	0835	
DRY BULB TEMP.	8.2	
WET BULB TEMP.	4.9	
WET BULB DEPR.	3.3	
DEW POINT	1.5	
RELATIVE HUMID.	63	

TABLE 2 LC-33 FLYING POLE ANEMOMETER MEASURED WIND

POLE #1			POLE #2			POLE #3		
X485,874.29			X485,874.29			X485,877.00		
Y185,953.90			Y185,952.00			Y186,116.00		
H4018.74			H4013.57			H4063.90		
38.7 ft. AGL			53.0 ft. AGL			81.0 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30		CALM	T-30		CALM	T-30	008	03
T-20		CALM	T-20	031	01	T-20	009	03
T-10		CALM	T-10		CALM	T-10	008	03
T-0.0		CALM	T-0.0		CALM	T-0.0	008	03
T+10		CALM	T+10		CALM	T+10	015	05

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WIND (102 FT TOWER)

LEVEL #1, 12 FEET			LEVEL #2, 60 FEET		
X484,982.64, Y185,057.73, H1183.00 (base)			X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	045	02	T-30	008	04
T-20	038	02	T-20	360	03
T-10	041	02	T-10	360	03
T-0.0	041	02	T-0.0	003	03
T+10	041	02	T+10	008	04

LEVEL #3, 102 FEET			LEVEL #4, 102 FEET		
X484,982.64, Y185,057.73, H3983.00 (base)			X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
T-30	009	05	T-30	352	11
T-20	012	06	T-20	351	10
T-10	012	05	T-10	350	11
T-0.0	013	06	T-0.0	349	10
T+10		05	T+10	350	10

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 15 Oct 82

SITE: LC-33
TIME: 0835 MDT
WSTM COORDINATES:
X= 484,837.84
Y= 184,124.44
H= 3,975.57

SITE: DON
TIME 0835 MDT
WSTM COORDINATES:
X= 511,988.37
Y= 247,396.36
H= 3,996.83

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	040	02
150	346	10
210	342	11
270	336	11
330	331	11
390	342	13
500	356	16
650	001	10
800	028	07
950	042	12
1150	066	13
1350	066	15
1550	063	16
1750	066	14
2000	062	08

Data obtained from a Double Theodolite
tracked pilot-balloon observation

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	358	04
150	330	11
210	329	12
270	329	11
330	329	10
390	329	10
500	330	09
650	007	11
800	018	15
950	025	14
1150	044	13
1350	051	13
1550	063	14
1750	085	10
2000	102	06

Data obtained from a Single Theodolite
tracked pilot-balloon observation

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGE

15 Oct 82

LC-37 0700 MDT

METCM1324063

151300124886

00000000 27670886

01625015 28440375

02635008 28780849

03012009 28610810

04059016 28280763

05090019 27920718

06092008 27650675

WSD 0825 MDT

METCM1324064

151460122888

00018002 28320808

01001016 28730878

02630011 29020852

03020010 28840813

04091018 28540766

05117020 28150721

06137007 27910679

LC-37 0930 MDT

METCM1324063

151550124887

00000000 28630887

01007011 28780876

02634011 28830851

03056013 28640811

04118011 28320764

05139015 27930719

06172005 27780676

GEODETIC COORDINATES
32-40175 LAT DEG
100-51232 LONG DEG

SIGNIFICANT LEVEL DATA
28/010103
LC-37

TABLE 6

STATION ALTITUDE 4051.7 FEET MSL
15 OCT. 62 0700 HRS MDT
ASCENDING NO. 103

PRESSURE	GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEW POINT DEGREES CENTIGRADE	
685.5	4051.4	3.1	-1.8	70.0
877.3	4302.5	10.4	2.3	57.0
874.3	4390.6	12.8	2.4	43.0
850.0	5170.2	14.2	1.5	42.0
816.5	6280.1	12.8	-1.9	30.0
720.9	9680.2	5.9	-7.7	37.0
706.0	10460.9	3.9	-6.6	39.0
684.4	11069.8	2.9	-9.3	40.0
658.2	12107.9	2.7	-15.3	25.0
624.1	13515.6	.1	-13.2	30.0
607.5	14223.2	-1.0	-15.2	35.0
599.3	14578.6	-1.9	-17.1	30.0

STATION ALTITUDE 4051.77 FEET MSL
15 OCT. 82
ASCENSION NO. 103

UPPER AIR DATA
280100100
LC-37
TABLE 7

GEODETIC COORDINATES
32.40175 LAT DEG
106.51252 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (DEGREES (IN))	SPEED KNOTS	INDEX OR REFRACTION
4051.4	885.5	3.1	70.0	1114.1	643.2	0	0	1.000275
4500.0	871.0	2.3	48.1	1057.2	600.0	5.9	1.7	1.000269
5000.0	855.4	1.7	43.6	1035.0	601.0	5.9	3.7	1.000262
5500.0	840.1	1.3	40.3	1017.0	600.9	5.9	5.6	1.000256
6000.0	825.1	1.0	37.6	1001.2	600.1	5.9	7.5	1.000249
6500.0	810.2	0.8	36.1	985.1	600.1	7.2	9.4	1.000244
7000.0	795.4	0.6	35.2	971.7	600.9	15.6	11.2	1.000239
7500.0	781.0	0.5	36.4	957.0	600.7	21.9	13.2	1.000235
8000.0	766.8	0.4	36.5	943.7	600.4	29.7	14.8	1.000231
8500.0	752.8	0.3	36.7	929.9	600.2	38.0	16.3	1.000226
9000.0	739.1	0.3	36.6	916.4	600.0	44.6	17.8	1.000222
9500.0	725.7	0.3	36.6	903.1	600.0	48.7	17.0	1.000218
10000.0	712.4	0.2	37.6	890.3	600.4	52.2	16.4	1.000215
10500.0	699.2	0.2	39.1	877.6	600.7	54.3	14.5	1.000211
11000.0	686.2	0.2	39.9	864.1	600.0	52.7	11.7	1.000208
11500.0	673.4	0.2	33.8	848.9	600.6	50.2	9.0	1.000202
12000.0	660.9	0.2	26.6	833.6	600.4	49.5	8.6	1.000196
12500.0	648.5	0.2	28.1	820.2	600.6	48.9	8.3	1.000193
13000.0	636.4	0.1	32.0	807.5	600.5			1.000191
13500.0	624.5	0.1	35.0	795.0	600.4			1.000188
14000.0	612.7	0.1	35.3	783.9	600.6			1.000185
14500.0	601.1	0.1	31.1	771.1	600.0			1.000180

STATION ALTITUDE 4051 0700 HRS MDT
 15 OCT. 62
 ASCENSION I.O. 103

MANDATORY LEVELS
 280100103
 LC-17
 TABLE 8

GEODETIC COORDINATES
 32.4017° LAT DEG
 106.3123° LONG DEG

PRESSURE (GEOPOTENTIAL)		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FELT	AIR DEGREES	DEWPOINT CENTIGRADE		DIRECTION DEGREES (TN)	SPEED KNOTS
650.0	5172.	14.2	1.5	4.	5.9	4.3
600.0	5844.	11.7	-2.8	5.	13.5	10.7
750.0	8664.	8.1	-5.8	37.	39.8	10.6
700.0	10468.	3.0	-8.8	39.	54.4	14.7
650.0	12427.	2.1	-14.7	23.	49.0	8.3
600.0	14531.	-1.0	-17.0	30.		

STATION ALTITUDE 3989.00 FEET MSL
15 OCT. 82
ASCENSION NO. 505

SIGNIFICANT LEVEL DATA
2840020305
WHITE SANDS
TABLE 9

GEODETIC COORDINATES
32-40043 LAT DEG
106-37033 LONG DEG

PRESSURE	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
888.1	3089.0	7.3	-0.2	59.0
872.2	4483.2	13.7	.0	39.0
850.0	5197.1	14.3	-1.3	34.0
834.3	5713.7	14.3	-0.5	23.0
792.3	7136.1	10.8	-4.8	33.0
761.5	8219.1	9.4	-2.8	42.0
708.0	10490.1	3.5	-4.3	57.0
682.2	11176.9	4.1	-13.6	23.0
672.4	11563.0	2.6	-17.4	19.0
653.6	12318.4	-0.2	-19.3	18.0
625.5	13480.0	-2.7	-15.6	30.3
592.0	14927.8	-10.7	-22.9	16.0
581.6	15391.7	-11.1	-25.0	16.0
508.6	18834.8	-21.2	-30.9	17.0
500.0	19263.7	-22.1	-31.3	22.0
414.9	23885.6	-22.8	-31.7	41.0
408.4	24269.4	-24.8	-27.9	63.0
400.0	24771.8	-29.0	-28.5	71.0
388.2	25491.8	-29.5	-39.0	37.0
356.1	27541.3	-37.6	-43.1	25.0
348.6	27974.5	-39.5	-49.9	26.0
300.0	31509.7	-41.1	-51.3	27.0
290.0	32276.8	-46.7		
276.9	33115.0	-48.8		
250.0	35575.0	-49.8		
239.1	36544.4	-54.6		
228.9	37486.1	-58.1		
200.0	40364.0	-58.4		
185.1	41984.2	-63.0		
180.6	42494.8	-64.6		
158.5	45172.3	-64.8		
150.0	46289.8	-66.6		
145.5	46905.0	-65.2		
130.5	47752.9	-65.0		
137.9	47985.0	-66.7		
125.8	49832.8	-67.1		
118.1	51097.5			
114.6	51702.3			
107.2	53030.4			
100.0	54425.5			

STATION ALTITUDE 3989.00 FEET NSL
 15 OCT. 02 0825 HRS MDT
 ASCENSION NO. 505

SIGNIFICANT LEVEL DATA

2900020505
 WHITE SANDS

TABLE 9 Cont'd

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIK DEGREES	DEWPOINT CENTIGRADE	
70.0 61564.7	-64.9		
50.0 68434.1	-59.6		
41.8 72162.0	-56.7		
30.0 79227.7	-49.7		
20.6 80250.0	-51.2		
20.0 88050.3	-45.6		
10.2 92731.3	-42.4		
13.6 96630.0	-44.2		
10.0 103503.5	-41.6		
8.6 106898.1	-41.2		

STATION ALTITUDE 1489.0 FEET MSL
15 OCT. 82 0825 HRS MDT
ASCENSION NO. 505

UNPRED. AIR DATA
200002000
JULITE SALES
TABLE 10

GEODETIC COORDINATES
32-40043 LAT DEG
100-57033 LONG DEG

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND M/SEC	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
3989.0	888.1	7.3	59.0	1100.3	655.3	10.0	1.9	1.000274
4000.0	887.7	7.0	58.6	1099.3	655.4	9.8	2.0	1.000274
4500.0	871.7	13.7	38.5	1055.7	660.7	4.4	3.8	1.000263
5000.0	850.1	14.1	35.4	1035.5	661.1	2.5	5.7	1.000257
5500.0	840.8	14.3	34.2	1016.9	661.2	1.5	7.5	1.000247
6000.0	825.7	13.6	25.0	1001.3	660.3	.9	9.4	1.000241
6500.0	810.8	12.4	28.5	987.1	659.4	12.0	10.3	1.000239
7000.0	796.2	11.1	32.0	973.7	657.5	20.0	11.5	1.000237
7500.0	781.4	10.3	36.0	960.7	656.0	40.0	13.5	1.000235
8000.0	767.6	9.7	40.2	943.2	655.0	50.0	10.1	1.000233
8500.0	753.6	8.7	43.0	929.3	654.0	57.2	17.5	1.000231
9000.0	739.8	7.3	47.2	916.3	653.3	62.3	18.9	1.000227
9500.0	726.2	6.0	50.5	904.0	651.7	65.0	19.6	1.000224
10000.0	712.8	4.7	53.8	891.0	650.7	67.4	19.8	1.000211
10500.0	699.7	3.4	56.5	879.3	649.0	68.7	16.6	1.000218
11000.0	686.7	3.5	31.4	863.7	648.4	70.5	13.3	1.000205
11500.0	674.0	4.0	19.7	846.4	646.9	70.2	9.6	1.000196
12000.0	661.5	3.2	18.4	833.1	647.9	70.2	6.1	1.000193
12500.0	649.1	2.2	19.9	820.7	646.7	79.9	6.5	1.000190
13000.0	637.0	1.0	25.0	808.7	645.3	87.6	7.0	1.000188
13500.0	625.0	-2.2	29.8	796.9	644.0	92.0	6.5	1.000187
14000.0	613.3	-2.2	25.0	782.0	643.9	90.2	5.7	1.000182
14500.0	601.7	-2.2	20.1	767.4	643.9	84.4	2.8	1.000177
15000.0	590.4	-6	16.0	754.1	643.4	51.0	1.2	1.000173
15500.0	579.2	-3.0	16.0	740.3	640.5	16.7	1.3	1.000170
16000.0	568.0	-4.1	16.2	733.1	639.2	19.8	1.8	1.000168
16500.0	557.0	-5.3	16.3	724.1	637.8	42.5	4.3	1.000165
17000.0	546.3	-6.4	16.5	713.2	636.4	46.6	6.3	1.000162
17500.0	535.7	-7.6	16.0	702.5	635.0	45.2	6.3	1.000160
18000.0	525.4	-3.8	16.8	691.7	635.0	38.9	6.1	1.000157
18500.0	515.3	-4.0	16.9	681.7	632.2	32.6	5.6	1.000154
19000.0	505.3	-10.9	17.0	670.9	631.1	25.6	5.0	1.000152
19500.0	495.3	-11.6	17.3	659.5	630.1	19.3	6.0	1.000149
20000.0	485.4	-12.7	17.0	649.0	628.0	3.9	6.5	1.000147
20500.0	475.7	-13.8	18.3	639.8	627.3	37.2	8.0	1.000144
21000.0	466.2	-14.9	18.9	628.7	626.2	37.0	11.0	1.000142
21500.0	456.9	-16.0	19.4	618.7	624.0	34.7	14.7	1.000140
22000.0	447.7	-17.1	20.0	608.3	622.5	30.2	10.2	1.000137
22500.0	438.8	-18.2	20.5	599.3	622.2	30.2	13.3	1.000135
23000.0	430.0	-19.3	21.0	590.4	620.0	29.1	10.9	1.000133

STATION ALTITUDE 3989.00 FEET MSL
15 OCT. 62
ASCENSION NO. 305

APPROX ALTITUDE
280000505
WHITE CLOUDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

0825 HRS MDT

TABLE 10 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KILOIS	WIND DATA DIRECTION SPEED KNOTS	INDEX OF REFRACTION
23500.0	421.4	-20.4	21.6	580.0	619.5	292.0	1.000131
24000.0	413.0	-21.5	27.6	571.4	610.1	288.9	1.000129
24500.0	404.5	-22.4	51.1	561.8	617.0	291.3	1.000128
25000.0	396.2	-23.4	65.5	552.4	613.0	293.0	1.000127
25500.0	388.1	-24.4	70.9	544.1	614.1	291.8	1.000125
26000.0	380.0	-25.0	62.6	535.0	612.8	290.7	1.000122
26500.0	372.1	-26.9	58.3	526.1	611.5	290.1	1.000119
27000.0	364.3	-27.9	46.0	517.3	610.2	290.3	1.000117
27500.0	356.7	-28.9	37.7	508.7	608.9	291.0	1.000115
28000.0	349.2	-29.6	25.0	499.3	608.1	292.4	1.000112
28500.0	341.7	-30.7	25.1	491.0	606.6	290.4	1.000110
29000.0	334.4	-31.3	25.3	482.7	605.2	288.7	1.000108
29500.0	327.3	-33.0	25.4	474.7	603.8	287.5	1.000106
30000.0	320.3	-34.1	25.6	466.7	602.3	286.3	1.000105
30500.0	313.4	-35.3	23.7	459.0	600.9	285.5	1.000103
31000.0	306.7	-36.4	25.9	451.3	599.4	284.9	1.000101
31500.0	300.1	-37.6	26.0	443.8	598.0	285.1	1.000099
32000.0	293.6	-38.8	26.6	436.4	596.4	285.0	1.000098
32500.0	287.1	-39.8	21.2**	429.7	595.1	284.0	1.000096
33000.0	280.8	-40.6	4.2**	423.7	594.1	283.1	1.000094
33500.0	274.6	-41.6		413.0	592.9	282.4	1.000092
34000.0	268.5	-42.8		406.0	591.3	282.1	1.000090
34500.0	262.5	-44.0		399.1	589.7	282.3	1.000089
35000.0	256.6	-45.3		392.3	588.1	282.0	1.000087
35500.0	250.8	-46.5		385.0	586.5	283.0	1.000086
36000.0	245.2	-47.6		378.7	585.1	284.4	1.000084
36500.0	239.6	-48.7		371.9	583.8	280.4	1.000083
37000.0	234.1	-49.3		364.3	582.9	280.4	1.000081
37500.0	228.8	-49.8		356.8	582.2	288.0	1.000079
38000.0	223.4	-50.7		349.9	581.1	280.3	1.000078
38500.0	218.3	-51.5		343.0	580.0	280.4	1.000076
39000.0	213.2	-52.3		336.4	578.9	280.5	1.000075
39500.0	208.3	-53.2		329.8	577.1	280.5	1.000073
40000.0	203.4	-54.0		323.4	575.7	288.1	1.000072
40500.0	198.7	-54.9		317.2	575.0	287.6	1.000071
41000.0	194.0	-56.0		311.2	574.1	287.6	1.000069
41500.0	189.4	-57.1		305.4	572.7	287.9	1.000068
42000.0	185.0	-58.1		300.0	571.3	288.0	1.000067
42500.0	180.6	-58.4		294.9	570.9	287.9	1.000065
43000.0	176.2	-59.1		289.0	569.7	280.0	1.000064

** AT LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3489.0 FT MSL
15 OCT. 62 0825 HRS MDT
ASCENSION NO. 505

UPPER AIR DATA
200000000
WHITE CLOUDS

TABLE 10 Cont'd

GEODETIC COORDINATES
32.40043 LAT DEG
106.57033 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND M/SEC	WIND DATA DIRECTION (DEGREES TRUE)	SPEED KNOTS	INDEX OF REFRACTION
43500.0	172.0	-60.1		281.2	508.0	200.9	51.8	1.000003
44000.0	167.8	-61.0		275.0	507.5	290.0	49.3	1.000001
44500.0	163.8	-61.8		270.0	506.3	293.3	46.5	1.000000
45000.0	159.8	-62.7		264.0	505.2	293.0	43.9	1.000059
45500.0	156.0	-63.1		258.7	504.0	293.3	41.3	1.000058
46000.0	152.2	-63.3		253.0	503.0	260.9	39.2	1.000056
46500.0	148.4	-63.8		247.0	502.7	279.1	37.8	1.000055
47000.0	144.6	-64.6		241.4	502.0	270.3	38.2	1.000054
47500.0	141.3	-64.7		236.1	502.4	274.0	38.8	1.000053
48000.0	137.0	-65.3		228.8	504.3	273.4	30.9	1.000051
48500.0	134.4	-64.2		224.1	503.1	277.5	33.8	1.000050
49000.0	131.1	-65.1		219.0	501.9	277.1	30.5	1.000049
49500.0	127.9	-66.0		215.1	500.7	274.1	27.0	1.000048
50000.0	124.8	-66.4		210.1	500.1	274.0	26.1	1.000047
50500.0	121.7	-65.2		204.5	500.9	272.2	26.6	1.000046
51000.0	118.7	-65.3		198.9	501.0	274.0	26.9	1.000044
51500.0	115.8	-65.1		193.0	501.0	276.7	27.0	1.000043
52000.0	112.9	-65.4		187.3	501.0	277.0	26.6	1.000042
52500.0	110.1	-66.0		183.2	500.7	270.0	26.0	1.000041
53000.0	107.4	-66.6		181.2	500.0	279.4	24.0	1.000040
53500.0	104.8	-68.0		176.9	500.0	281.0	21.3	1.000039
54000.0	102.2	-67.0		172.0	500.4	287.1	16.2	1.000038
54500.0	99.6	-67.1		168.4	500.3	297.5	15.1	1.000037
55000.0	97.2	-66.9		164.1	500.2	307.4	12.5	1.000036
55500.0	94.8	-66.8		160.0	500.7	311.0	10.0	1.000035
56000.0	92.4	-66.6		155.9	500.9	314.1	7.4	1.000035
56500.0	90.2	-66.5		152.0	560.1	294.9	5.1	1.000034
57000.0	87.9	-66.3		148.1	560.3	290.0	4.0	1.000033
57500.0	85.8	-66.2		144.3	560.5	241.2	4.9	1.000032
58000.0	83.7	-66.0		140.7	560.7	230.1	6.0	1.000031
58500.0	81.6	-65.8		137.1	560.9	222.5	6.1	1.000031
59000.0	79.6	-65.7		133.0	561.1	215.1	6.1	1.000030
59500.0	77.6	-65.5		130.2	561.3	212.0	6.0	1.000029
60000.0	75.7	-65.4		126.9	561.5	212.9	5.7	1.000028
60500.0	73.4	-65.2		123.7	561.3	231.0	5.5	1.000028
61000.0	72.0	-65.1		120.0	560.0	250.7	6.7	1.000027
61500.0	70.2	-64.9		117.0	560.2	271.0	6.0	1.000026
62000.0	68.5	-64.6		114.0	560.0	274.1	5.5	1.000025
62500.0	66.0	-64.2		111.5	560.2	275.0	7.9	1.000025
63000.0	63.3	-63.8		108.0	560.7	271.1	4.5	1.000024

STATION ALTITUDE 3489.00 FEET MSL
15 OCT. 82 0825 HRS MDT
ASCENSION NO. 505

UNPEAKED AIR

20.000000
WHITE 30000

TABLE 10 Cont'd

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE'S CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	WIND DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INDEX OF REFRACTION
63500.0	63.7	-63.4		105.8	243.1	1.3	1.000024
64000.0	62.1	-63.0		103.0	131.3	2.2	1.000023
64500.0	60.6	-62.6		100.3	117.0	5.0	1.000022
65000.0	59.2	-62.3		97.7	117.2	5.8	1.000022
65500.0	57.7	-61.9		95.2	118.2	6.2	1.000021
66000.0	56.3	-61.5		92.7	119.2	6.1	1.000021
66500.0	55.0	-61.1		90.3	117.4	5.6	1.000020
67000.0	53.6	-60.7		88.0	116.2	5.7	1.000020
67500.0	52.3	-60.3		85.7	114.6	6.6	1.000019
68000.0	51.1	-59.9		83.4	113.6	7.3	1.000019
68500.0	49.8	-59.5		81.2	113.1	6.5	1.000018
69000.0	48.7	-59.2		79.2	112.5	5.8	1.000018
69500.0	47.5	-58.8		77.2	112.0	3.0	1.000017
70000.0	46.4	-58.4		75.2	107.2	.0	1.000017
70500.0	45.3	-58.0		73.3	291.8	1.8	1.000016
71000.0	44.2	-57.6		71.4	292.4	2.6	1.000016
71500.0	43.2	-57.2		69.6	292.5	3.2	1.000015
72000.0	42.1	-56.8		67.6	290.3	2.9	1.000015
72500.0	41.1	-56.4		65.4	287.5	2.6	1.000015
73000.0	40.2	-55.9		63.4	284.9	2.7	1.000014
73500.0	39.3	-55.4		62.8	282.9	3.0	1.000014
74000.0	38.3	-54.9		61.2	280.0	3.1	1.000014
74500.0	37.5	-54.4		59.6	275.3	2.7	1.000013
75000.0	36.6	-53.9		58.1	268.1	2.2	1.000013
75500.0	35.7	-53.4		56.7	270.9	2.4	1.000013
76000.0	34.9	-52.9		55.2	275.4	2.7	1.000012
76500.0	34.1	-52.4		53.6	274.6	3.1	1.000012
77000.0	33.3	-51.9		52.4	268.0	3.9	1.000012
77500.0	32.5	-51.4		51.1	263.4	4.6	1.000011
78000.0	31.8	-50.9		49.8	261.1	5.3	1.000011
78500.0	31.0	-50.4		48.6	259.3	5.9	1.000011
79000.0	30.3	-49.9		47.3	260.1	5.7	1.000011
79500.0	29.6	-49.1		46.3	296.3	5.2	1.000010
80000.0	28.9	-48.4		45.4	323.2	6.0	1.000010
80500.0	28.3	-48.0		44.4	337.7	6.4	1.000010
81000.0	27.6	-47.7		43.3	349.6	7.0	1.000010
81500.0	27.0	-47.3		42.2	352.8	6.8	1.000009
82000.0	26.4	-46.9		41.2	342.6	5.4	1.000009
82500.0	25.8	-46.6		40.2	340.2	4.3	1.000009
83000.0	25.2	-46.2		39.2	317.0	4.2	1.000009

STATION ALTITUDE 3989.00 FEET MSL
 15 OCT. 82 0825 HRS MDT
 ASCENSION NO. 505

UNDEP AIR DATA
 2800020500
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 10 Cont'd

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
83500.0	24.6	-48.9		34.3	583.4		310.8	1.000004
84000.0	24.1	-48.5		37.4	583.9		304.5	1.000004
84500.0	23.5	-48.2		36.4	584.4		298.7	1.000008
85000.0	23.0	-47.8		35.6	584.8		292.8	1.000008
85500.0	22.5	-47.4		34.7	585.3		284.0	1.000008
86000.0	22.0	-47.1		33.9	585.8		276.0	1.000008
86500.0	21.5	-46.7		33.0	586.2		269.6	1.000007
87000.0	21.0	-46.4		32.2	586.7		264.2	1.000007
87500.0	20.5	-46.0		31.5	587.2		258.5	1.000007
88000.0	20.0	-45.6		30.7	587.6		252.4	1.000007
88500.0	19.6	-45.3		30.0	588.0		247.6	1.000007
89000.0	19.2	-45.0		29.3	588.5		242.9	1.000007
89500.0	18.7	-44.7		28.6	588.9		236.2	1.000006
90000.0	18.3	-44.4		27.9	589.3		230.4	1.000006
90500.0	17.9	-44.0		27.2	589.7		225.0	1.000006
91000.0	17.5	-43.7		26.6	590.1		219.1	1.000006
91500.0	17.1	-43.4		26.0	590.5		214.1	1.000006
92000.0	16.7	-43.1		25.3	590.9		208.0	1.000006
92500.0	16.4	-42.7		24.6	591.3		207.4	1.000005
93000.0	16.0	-42.7		24.2	591.4		208.2	1.000005
93500.0	15.7	-42.9		23.7	591.1		203.6	1.000005
94000.0	15.3	-43.1		23.2	590.9		209.4	1.000005
94500.0	15.0	-43.3		22.7	590.6		208.8	1.000005
95000.0	14.6	-43.5		22.2	590.3		202.5	1.000005
95500.0	14.3	-43.7		21.7	590.1		257.6	1.000005
96000.0	14.0	-43.9		21.3	589.8		253.1	1.000005
96500.0	13.7	-44.1		20.8	589.5		249.0	1.000005
97000.0	13.4	-44.1		20.3	589.7		245.1	1.000005
97500.0	13.1	-43.9		19.9	589.9		247.2	1.000004
98000.0	12.8	-43.7		19.4	590.1		252.8	1.000004
98500.0	12.5	-43.5		19.0	590.4		257.5	1.000004
99000.0	12.2	-43.3		18.5	590.6		259.0	1.000004
99500.0	12.0	-43.1		18.1	590.9		258.1	1.000004
100000.0	11.7	-42.9		17.7	591.1		257.2	1.000004
100500.0	11.4	-42.7		17.3	591.4		257.5	1.000004
101000.0	11.2	-42.5		16.9	591.6		259.0	1.000004
101500.0	10.9	-42.4		16.5	591.8		260.5	1.000004
102000.0	10.7	-42.2		16.1	592.1		263.6	1.000004
102500.0	10.5	-42.0		15.8	592.3		269.4	1.000004
103000.0	10.2	-41.8		15.4	592.6		275.0	1.000003

STATION ALTITUDE 3889' ARS 101 MSL		UPPER AIR DATA		GEOGRAPHIC COORDINATES	
15 OCT. 82		28,0020500		32.40043 LAT DEG	
ASCENSION NO. 505		WHITE SWIRL		106.37033 LONG DEG	
TABLE 10 Cont'd					

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND KIOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KIOTS	INDEX OF REFRACTION
103500.0	10.0	-41.6		15.0	592.0	275.5	19.0	1.000003
104000.0	9.8	-41.5		14.7	592.9	272.7	19.1	1.000003
104500.0	9.6	-41.5		14.4	593.0	269.9	19.3	1.000003
105000.0	9.4	-41.4		14.1	593.0			1.000003
105500.0	9.2	-41.4		13.8	593.1			1.000003
106000.0	9.0	-41.3		13.4	593.2			1.000003
106500.0	8.8	-41.2		13.1	593.3			1.000003

STATION ALTITUDE 1989.00 FEET MSL
15 OCT. 42
ASCENSION NO. 505

MANDATORY LEVELS
28000 PUSOS
4 HIF 30005
TABLE 11

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES	WET BULB DEGREES	PERCENT		DIRECTION DEGREES (TN)	SPEED KNOTS
150.0	5193.	14.3	-1.3	34.		2.0	0.4
100.0	6465.	11.6	-5.0	31.		22.8	14.2
750.0	8625.	8.4	-3.0	43.		58.7	17.9
700.0	10490.	3.4	-4.5	57.		68.7	10.7
650.0	12451.	2.2	-14.6	20.		79.1	0.5
600.0	14557.	-2.2	-20.7	19.		80.8	2.5
550.0	16816.	-6.0	-27.4	10.		40.8	0.0
500.0	19238.	-11.1	-31.3	17.		22.2	5.8
450.0	21864.	-16.8	-34.5	20.		310.8	18.7
400.0	24730.	-22.0	-27.9	63.		292.4	22.7
350.0	27896.	-29.5	-42.9	20.		292.7	32.1
300.0	31407.	-37.6	-49.9	20.		285.1	40.6
250.0	35497.	-46.7				283.0	53.1
200.0	40260.	-54.6				287.8	55.4
175.0	43030.	-59.5				288.4	53.0
150.0	46144.	-63.4				282.8	30.4
125.0	49816.	-66.7				272.6	20.0
100.0	54257.	-67.1				295.1	13.7
80.0	58600.	-65.7				217.2	0.1
70.0	61357.	-64.0				271.2	0.1
60.0	64460.	-62.5				110.4	5.5
50.0	68176.	-59.4				113.2	0.7
40.0	72795.	-55.8				284.7	2.7
30.0	78886.	-49.7				277.9	5.4
25.0	82794.	-49.1				316.0	4.2
20.0	87636.	-45.6				252.3	5.4
15.0	93977.	-43.3				207.6	14.2
10.0	102941.	-41.6				275.0	19.0

STATION ALTITUDE 4051.57 FEET MSL
15 OCT. 62 0930 HRS MDT
ASCENSION '00. 104

SIGNIFICANT LEVEL DATA
28.0160104
LC-17
TABLE 12

GEODETIC COORDINATES
32.40175 LAT DEG
106.51232 LONG DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEW POINT DEGREES	
886.5	4051.4	12.4	.5	44.0
882.6	4172.8	12.6	-0.6	40.0
878.5	4301.5	14.4	.0	39.0
850.0	5216.6	14.7	-1.4	33.0
822.2	6137.0	13.1	-2.8	33.0
783.4	7467.2	11.3	-2.8	37.0
736.3	9154.5	6.6	-2.8	51.0
717.9	9835.5	5.0	-4.3	51.0
700.0	10512.9	5.0	-7.8	39.0
681.9	11215.0	4.8	-13.0	26.0
656.3	12236.6	2.9	-12.1	32.0
622.1	13652.4	-0.3	-14.2	34.0
597.5	14710.4	-1.8	-20.7	22.0

STATION ALTITUDE 4051.7 FEET MSL
15 OCT. 62 0930 HRS MDT
ASCENSION 10. 104

UPPER AIR DATA
2000100104
LC-17
TABLE 13

GEOMETRIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ METER	SPEED OF SOUND METER	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	330.5	12.4	44.0	1070.0	059.2	00	0.0	1.000270
4500.0	472.2	14.5	37.7	1053.0	061.0	33.6	2.0	1.000263
5000.0	850.7	14.6	34.4	1034.4	061.7	33.6	4.2	1.000257
5500.0	841.3	14.2	33.0	1017.5	061.2	33.6	6.5	1.000251
6000.0	820.3	13.3	33.0	1002.4	061.2	33.6	8.7	1.000247
6500.0	811.4	12.6	34.1	986.9	059.5	33.6	10.9	1.000243
7000.0	790.8	11.0	35.6	971.4	059.0	30.9	11.9	1.000240
7500.0	782.5	11.2	37.3	950.3	057.7	49.3	12.0	1.000236
8000.0	768.2	9.6	41.4	943.4	050.1	53.5	12.5	1.000234
8500.0	754.2	8.4	45.6	930.8	054.5	50.6	12.4	1.000231
9000.0	740.5	7.0	40.7	910.4	050.9	73.9	12.4	1.000229
9500.0	720.9	5.8	51.0	895.0	051.4	80.3	12.3	1.000225
10000.0	713.5	5.0	48.1	891.0	050.5	81.6	10.8	1.000219
10500.0	700.3	5.0	39.2	875.5	050.5	83.9	9.3	1.000212
11000.0	687.4	4.9	30.0	860.1	050.0	86.4	8.3	1.000204
11500.0	674.7	4.3	27.7	846.1	049.5	88.7	7.8	1.000200
12000.0	662.1	3.5	30.6	833.1	048.2	91.3	7.4	1.000197
12500.0	649.8	2.3	32.4	820.7	047.0			1.000194
13000.0	637.6	1.2	33.1	808.7	050.7			1.000191
13500.0	625.7	0.0	33.0	796.9	044.5			1.000188
14000.0	613.9	-0.8	30.1	784.4	045.5			1.000184
14500.0	602.3	-1.5	24.4	771.0	041.4			1.000179

STATION ALTITUDE 4051.77 FEET MSL
15 OCT. 82 0930 HRS MDT
ASCENSION NO. 104

EXPERIMENTAL DATA
7800100104
LC-57

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LONG DEG

TABLE 14

PRESSURE MILLIBARS	POTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEW POINT DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
					DIRECTION DEGREES TRUE	SPEED KNOTS
650.0	5213.	14.7	-1.4	55.	33.0	5.2
600.0	6886.	15.1	-2.0	35.	30.5	12.0
750.0	8648.	0.0	-0.7	47.	08.9	12.4
700.0	10502.	5.0	-2.8	50.	04.0	9.3
650.0	12479.	2.2	-12.5	50.		
600.0	14584.	-1.6	-19.9	55.		

DATE
ILMEI